

**Work Order ID 58970**

Thursday, May 20, 2010 12:36:44 PM



Page 1

Item ID: D4054-001

Accept



Setup Start



Revision ID:

Stop



Item Name: Tube Assembly

Start Date: 5/20/2010 Start Qty: 6.00



Cust Item ID:

Required Date: 5/31/2010 Req'd Qty: 6.00



Customer:

Reference:

Approvals:

Process Plan:   H  Date: 10/5/20

Tooling:

Date:           

Run Start

QC:           Date:           SPC (Y/N):           Date:           

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D4054

A

100

0.00



Small Fab

Small Fab

Memo

0.00

Small Fab

Bend tube as per Dwg D4054

Install sleeves and nuts

Flare ends as per Dwg D4054.

&gt; m.k 10/05/26

(6x)

110

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

S 10/05/26

(46)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 58970**

Thursday, May 20, 2010 12:36:44 PM



Page 2

Item ID: D4054-001

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Setup Start



Revision ID:

Item Name: Tube Assembly

Stop



Start Date: 5/20/2010 Start Qty: 6.00



Cust Item ID:

Required Date: 5/31/2010 Req'd Qty: 6.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120



Packaging

Identify as per dwg &amp; Stock Location

193

0.00

Memo

0.00

Packaging

10-5-26 S/P (6x)

130



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

106602  
WF  
10-6-02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, May 20, 2010 12:36:48 PM

Page 1

Work Order ID: 58970

Parent Item: D4054-001

Parent Item Name: Tube Assembly


Comments: IPP rev A 10.01.19 new issue EC verified by:DD

Start Date: 5/20/2010

Required Date: 5/31/2010

Start Qty: 6.00

Required Qty: 6.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Qty Issued	Date Issued	Status
AN818-8D  Nut		Purchased	No			100	Each	81.0000	2			

Location	Loc Qty	Loc Code
ST331	81	
113795 ✓	1	
114382	20	
114523 ✓	20	
114544 ✓	40	

9x M-L  
3x 10/05/26

M6061T6T0.500W.049  6061-T6 RD Tube .500 x.049W	Purchased	No
--	-----------	----

100	f	88.9756	1.78
-----	---	---------	------

Location	Loc Qty	Loc Code
MAT	67.3684	
114520 ✓	24	
114530	43.3684	
MAT014	21.6072	
111028	16.5895	
111944	5.0177	

10.68 M-L  
10/05/25

MS20819-8D  Sleeve	Purchased	No
--	-----------	----

100	Each	72.0000	2
-----	------	---------	---

Location	Loc Qty	Loc Code
ST323	72	
113795 ✓	32	
114445	40	

12x M-L  
10/05/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

ITEM NO.	QTY	P/N	DESCRIPTION
1	X	D4054-001	TUBE ASSEMBLY
2	2	MS20819-8D	SLEEVE
3	2	AN818-8D	NUT

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 58970  
PS10 5-20

**RELEASED**  
2010-01-14  
*MD*

# **D4054-001 TUBE ASSEMBLY**

## **NOTES:**

- 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL  
PER WW-T-700/6  
REF DART SPEC M6061T60.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-001" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.20 lbs
- 8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-001T1
- 9) TUBES TO BE FLARED 37° TO MATE WITH MS33514 FITTINGS, TYPICAL
- 10 ENSURE SEAMLESS TUBING IS USED

A	NEW ISSUE	RF	09.12.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>AE</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>AE</i>	<b>D4054</b>	SHEET 1 OF 3
APPROVED	<i>MD</i>	TITLE	SCALE
DE APPR.	<i>MD</i>	<b>TUBE ASSEMBLIES</b>	NTS
DATE	09.12.30	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

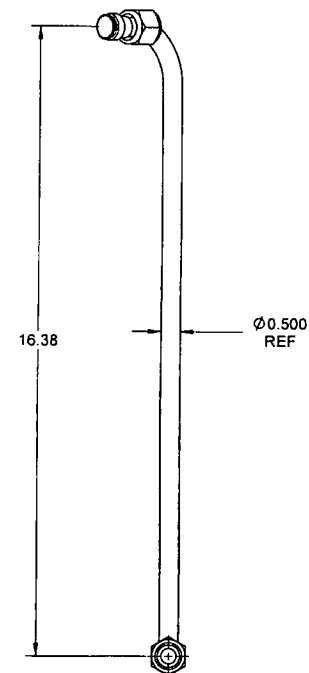
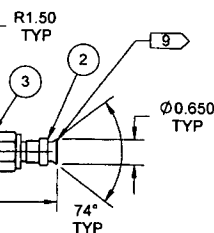
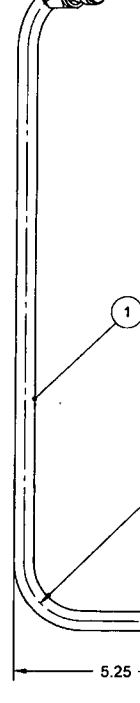
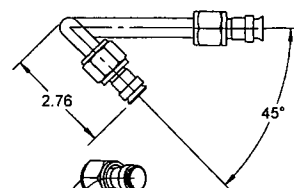
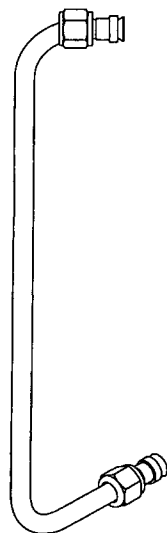
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



ITEM	QTY -003	P/N	DESCRIPTION
1	X	D4054-003	TUBE ASSEMBLY
2	2	MS20819-8D	SLEEVE
3	2	AN818-8D	NUT



*w/o 58270*

**RELEASED**  
2010-01-14  
*mp*

# NOTES:

- 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL  
PER WW-T-700/6  
REF DART SPEC M6061T60.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-003" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.21 lbs
- 8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-003T1
- 9) TUBES TO BE FLARED 37° TO MATE WITH MS33514 FITTINGS, TYPICAL
- 10) ENSURE SEAMLESS TUBING IS USED

## **D4054-003 TUBE ASSEMBLY**

DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>RF</i>	DRAWING NO. <b>D4054</b>	REV. A
MFG. APPR.	<i>RF</i>	SHEET 2 OF 3	
APPROVED	<i>RF</i>	TITLE	SCALE
DE APPR.	<i>RF</i>	<b>TUBE ASSEMBLIES</b>	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

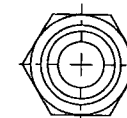
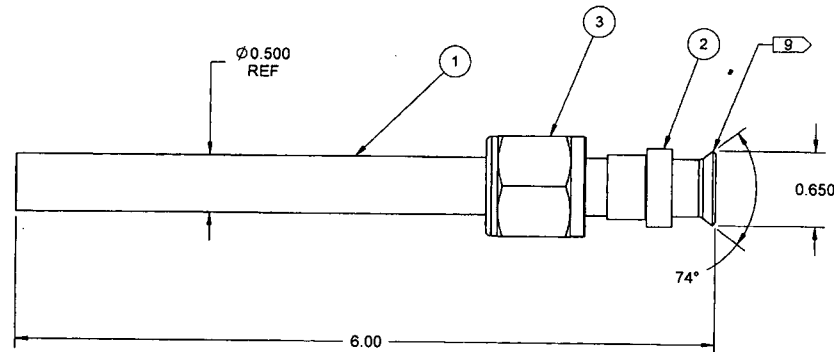
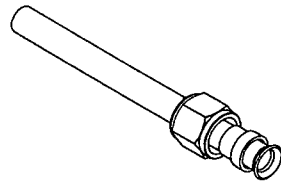
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

ITEM	QTY -009	P/N	DESCRIPTION
1	X	D4054-009	TUBE ASSEMBLY
2	1	MS20819-8D	SLEEVE
3	1	AN818-8D	NUT



W/0 58910

# **D4054-009 TUBE ASSEMBLY**

## **NOTES:**

- 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL  
PER WW-T-700/6  
REF DART SPEC M6061T60.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-009" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.07 lbs
- 8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-009T1
- 9) TUBES TO BE FLARED 37° TO MATE WITH MS33514 FITTINGS
- 10) ENSURE SEAMLESS TUBING IS USED

**RELEASED**  
2010-01-14  
MP

DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. A
MFG. APPR.	RF	<b>D4054</b>	SHEET 3 OF 3
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	<b>TUBE ASSEMBLIES</b>	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries